

AMENDMENTS TO THE CLAIMS:

Without prejudice, this listing of claims will replace all prior versions and listings of the claims in the present application:

LISTING OF CLAIMS:

- 1-9. (Canceled).
10. (Withdrawn) A sensor comprising a sensor element (2), at least one digital interface (5), and means (6) for transmitting a fault pattern via the at least one digital interface (5).
11. (Withdrawn) The sensor according to Claim 10, wherein an eight-bit word (MONI) in a data telegram is provided for the fault message.
12. (Withdrawn) The sensor according to Claim 11, wherein for generation of the fault message, means (4) are present for monitoring at least one phase-lock loop of the sensor or at least one control voltage in terms of a first predefined range, or the output values of at least one analog/digital converter in terms of a second predefined range, or output values of at least one digital/analog converter in terms of a third predefined range, or dynamic limits of at least one capacitance/voltage converter in terms of a fourth predefined range, or at least one offset controller in terms of a fifth predefined range, or at least one common-mode controller in terms of departure from a sixth predefined range, or at least one variable representing a sensor oscillation in terms of a seventh predefined range, or impermissible values of at least one counter as defined, a respective value being storable in a respective register in the event of a fault.
13. (Withdrawn) The sensor according to Claim 12, wherein the respective register is reset after an end of the respective fault.
14. (Currently Amended) A control unit comprising:

a sensor comprising a sensor element, at least one digital interface, and means for transmitting a fault pattern via the at least one digital interface, wherein the fault pattern is a digital fault pattern comprising individual bits corresponding to different fault flags; and

a processor that receives at least one signal from the sensor via the at least one digital interface, wherein the at least one sensor signal includes the fault pattern and the processor evaluates the at least one sensor signal as a function of the fault pattern,

wherein the sensor is configured to respond to two different read instructions, returning a first portion of the fault pattern in response to a first read instruction, and a second portion of the fault pattern in response to a second read instruction, the first portion having bits corresponding to a first plurality of fault flags, the second portion having bits corresponding to a second plurality of fault flags different than the first plurality of fault flags.

15. (Previously Presented) The control unit according to Claim 14, wherein the sensor is disposed inside a housing of the control unit.

16. (Withdrawn) A method for monitoring at least one sensor (1), the at least one sensor (1) transmitting a fault pattern to a processor (7).

17. (Withdrawn) The method according to Claim 16, wherein a signal from the sensor is used for a restraint system (9).

18. (Withdrawn) The method according to Claim 16, wherein a signal from the sensor is conveyed to a vehicle dynamics system.

19. (Previously Presented) The control unit of claim 14, wherein each fault flag corresponds to a different sensor-internal monitoring mechanism.

20. (Currently Amended) The control unit of claim 14, wherein the sensor is configured to transmit ~~a single~~ exactly one operating state bit with every regular sensor output value transmission, the ~~single~~ operating state bit indicating whether ~~that~~ at least one fault is detected by the sensor,

~~wherein the sensor is configured to respond to two different read instructions, returning a first portion of the fault pattern in response to a first read instruction, and a second portion of the fault pattern in response to a second read instruction, and~~

wherein the operating state bit indicates whether at least one of the two read instructions will return a fault indication.

21. (Previously Presented) The control unit of claim 14, further comprising: a memory connected to the processor.
22. (Previously Presented) The control unit of claim 14, further comprising: a data output that is connectable to a restraint system of an automotive system.
23. (Previously Presented) The control unit of claim 14, further comprising: a monitoring circuit connectable to the digital interface of the sensor for evaluating the at least one sensor signal and influencing the enabling of a restraint arrangement based on the evaluation of the at least one sensor signal.
24. (Previously Presented) The control unit of claim 14, wherein the sensor element is for acquiring a measured variable.
25. (Previously Presented) The control unit of claim 24, wherein the sensor further comprises: a functional and monitoring module for performing analog-to-digital conversion of the sensor signal, including the measured variable.
26. (Previously Presented) The control unit of claim 25, wherein the functional and monitoring module is for monitoring the sensor.
27. (Previously Presented) The control unit of claim 14, wherein the sensor continuously updates the fault pattern.
28. (Previously Presented) The control unit of claim 14, wherein the fault pattern includes a value of a measured variable which produced a fault.

29. (Previously Presented) The control unit of claim 14, wherein the sensor includes a rotation rate sensor for an automotive system.

30. (Currently Amended) A control unit comprising:

a sensor comprising a sensor element, at least one digital interface, and means for transmitting a fault pattern via the at least one digital interface, wherein the fault pattern is a digital fault pattern comprising individual bits corresponding to different fault flags, and wherein the sensor is configured to transmit ~~a single~~ exactly one operating state bit with every regular sensor output value transmission, the ~~single~~ operating state bit indicating whether ~~that~~ at least one fault is detected by the sensor; and

a processor that receives at least one signal from the sensor via the at least one digital interface, wherein the at least one sensor signal includes the fault pattern and the processor evaluates the at least one sensor signal as a function of the fault pattern, wherein the sensor is configured to respond to two different read instructions from the processor and return a first portion of the fault pattern in response to a first read instruction and a second portion of the fault pattern in response to a second read instruction, the first portion having bits corresponding to a first plurality of fault flags, the second portion having bits corresponding to a second plurality of fault flags different than the first plurality of fault flags, wherein the operating state bit indicates whether at least one of the two read instructions will return a fault indication.

31. (New) The control unit of claim 14, wherein the first portion includes 8 first bits corresponding to the first plurality of fault flags, and the second portion includes 8 second bits corresponding to the second plurality of fault flags.

32. (New) The control unit of claim 14, wherein the processor is configured to determine a particular action to perform in response to a particular value of the fault pattern by accessing a look-up table relating a plurality of possible values of the fault pattern to a plurality of actions, wherein the look-up table relates each possible value of the fault pattern to at least one of the plurality of actions.

33. (New) The control unit of claim 32, wherein at least some of the plurality of possible actions do not include initiating a sensor replacement process.

34. (New) The control unit of claim 30, wherein the first portion includes 8 first bits corresponding to the first plurality of fault flags, and the second portion includes 8 second bits corresponding to the second plurality of fault flags.

35. (New) The control unit of claim 30, wherein the processor is configured to determine a particular action to perform in response to a particular value of the fault pattern by accessing a look-up table relating a plurality of possible values of the fault pattern to a plurality of actions, wherein the look-up table relates each possible value of the fault pattern to at least one of the plurality of actions.

36. (New) The control unit of claim 35, wherein at least some of the plurality of possible actions do not include initiating a sensor replacement process.